

## II. CLAIM AMENDMENTS

1-5. (Canceled)

6. (Original) A method for transporting substrates into and out of a substrate holding chamber comprising the steps of:

placing an end effector of a transport arm in a first position;

moving the end effector between the first position and a second position along a first path to axially translate a substrate on the end effector through an opening of the substrate holding chamber, the substrate being axially translated along the first path; and

returning the end effector from the second position through the opening of the substrate holding chamber to the first position along a second path, a portion of the second path extending through the opening of the substrate holding chamber being different than a comparable portion of the first path extending through the opening of the substrate holding chamber.

7. (Original) A method as in Claim 6, wherein the portion of the second path extending through the opening of the substrate holding chamber is generally described by a portion of an axis connecting a pivot axis of the transport arm at a shoulder of the transport arm to the substrate holding chamber.

8-18. (Cancelled)

19. (Previously Presented) In a substrate processing apparatus comprising a frame with a plurality of side by side substrate storage areas, a robot transport arm pivotably mounted to the frame to transport substrates between the substrate storage areas and a substrate holding area, the robot transport arm having an end effector and a wrist, the end effector being pivotably mounted to the wrist of the robot transport arm, and a controller controllably connected to the robot transport arm wherein the improvement comprises:

the controller being programmed to control the robot transport arm for substantially rectilinearly moving substrates into and out of at least two of the plurality of side by side substrate storage areas along axes of translation corresponding to each of the two substrate storage areas, and for moving the end effector without substrates into and out of at least one of the two storage area along a different path than the axis of translation corresponding to the storage area,

wherein an axis about which the robot transport arm pivots relative to the frame stays in one location relative to the frame both when the robot transport arm moves substrates into and out of each of the two substrate storage areas, and when the end effector is moved without substrates into the at least one of the two substrate storage areas, and

wherein the end effector is slaved to the robot transport arm to rotate automatically about the wrist when the robot transport arm moves substrates into and out of each of the substrate storage areas.

20. (Original) A substrate transport apparatus as in Claim 19, wherein when the robot transport arm moves substrates into and out of each of the two substrate storage areas, the axis about which the robot transport arm pivots is located between the axes of translation of the two substrate storage areas.

21. (Original) A substrate transport apparatus as in Claim 19, wherein the two axes of translation of the two substrate storage areas are substantially parallel to each other.

22. (Original) A substrate transport apparatus as in Claim 19, wherein the robot transport arm is an articulated arm comprising an upper arm and a lower arm, the upper arm being independently rotatable about the axis about which the robot transport arm pivots and the lower arm being independently rotatable relative to the upper arm.

23. (Previously Presented) A substrate transport apparatus comprising:

a robot transport arm with an end effector to hold a substrate thereon;

means for rotating the robot transport arm about a first axis of rotation, the means for rotating the robot transport arm comprising a first drive mechanism being drivingly connected to the robot transport arm to rotate the robot transport arm as a unit about the axis of rotation;

means for linearly displacing the end effector of the robot transport arm, the means for displacing the end effector comprising a second drive mechanism drivingly connected to the robot transport arm to substantially

radially displace the end effector relative to the axis of rotation; and

a controller controlling the means for rotating the robot transport arm and the means for displacing the end effector to provide compound rotation of the robot transport arm about the axis of rotation with radial displacement of the end effector relative to the axis of rotation resulting in general rectilinear translation of the substrate from an initial position to a final position along a first path through a transport opening in the substrate holding chamber;

wherein the controller controls the means for rotating and the means for displacing for returning the end effector from the final position along a second path through the opening in the substrate holding chamber, the second path being different than the first path.

24. (Currently Amended) A method for transporting a substrate into and out of a substrate holding area on a substrate processing apparatus comprising the steps of:

providing the substrate on an end effector of a transport arm, the end effector being rotatably mounted to a wrist of the transport arm;

rotating the transport arm about an axis of rotation at a shoulder of the transport arm to rotate the wrist about the axis of rotation; and

moving the transport arm to radially displace the wrist of the transport arm relative to the axis of rotation at the shoulder of the transport arm, wherein the step of moving the transport arm rotates the end effector about the wrist to rotate the substrate about the axis of rotation at the shoulder of the transport arm in concert with rotation of the wrist about the axis of rotation at the shoulder of the transport arm,

wherein the movement and rotation of the transport arm result in the substrate on the end effector being displaced from an initial position to a final position along a first path through a substrate transport passage of the substrate holding area, and wherein the end effector is returned to the initial position along a second path through the substrate transport passage, the second path being different than the first path.

25. (Previously Presented) A method as in Claim 24, wherein the end effector is returned to the initial position without the substrate.

26. (Currently Amended) A method as in Claim [[1]] 24, wherein the substrate processing apparatus comprises at least three of the substrate holding areas located side by side to each other, the transport arm transporting substrates into and out of each of the three substrate holding areas, and wherein the axis of rotation at the shoulder of the transport arm stays in one location relative to the three substrate holding areas when the transport arm transports substrates into and out of each of the three substrate holding areas.

27-29. (Canceled)